GAS JOURNAL

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A SENSE OF PROPORTION

AN address was recently given by Mr. F. M. Birks, Vice President of the Institution of Gas Engineers, at a joint meeting of the Scottish Junior Gas Association. It was an address quite out of the ordinary and to our mind of much significance. The advice Mr. Birks gave is excellent, and what he had to say should be taken to heart. It frequently occurs that, after weighing up the evidence relating to a technical problem, a satisfactory conclusion can only be drawn if the tolerances of the variables are fully appreciated, for, as Mr. Birks contended, 'most conclusions are matters of compromise rather than the result of exact determinations. In such cases an appreciation of the tolerances within which any one factor can be displaced from its optimum value, without materially affecting the issue, is of great value.' How often one sees keen young men, scientifically trained, deep in calculation of some problem to the *nth* degree of accuracy when the practical data on which his work is based cannot be measured to anything like this degree of accuracy. Indeed, one's vision may be so narrowed that there may be a tendency not to see the wood for the trees ; and large accumulations of figures representing experimental data on process results are often misleading, for the important trends and relationships may be entirely lost in a welter of information.

Mr. Birks gave several pertinent examples of the application of 'tolerances.' In distribution practice, as instance, gas mains are never laid to meet the present needs ; they are dimensioned to cope with future requirements. These are subject to an estimated response of human behaviour, preferences, and habits—and the tolerances relating to these human qualities are extremely wide. And the author mentioned the trend, for some years prior to the war, on the part of appliance designers to narrow down the limits of gas quality within which gas appliances would function satisfactorily. The aim was to improve efficiency, but this narrowing down faced the works engineer with an ever-growing problem of producing gas efficiently and economically ; he was hampered in his technique of balancing coal gas and carburetted water gas to meet changing market conditions and to deal economically with the peak load. And we endorse Mr. Birks's view that the limits for gas quality should be as wide as possible consistent with the interests of appliance efficiencies and gas manufacturing economics. We would draw particular attention, too, to the author's comments on load factor. Time and again, he remarked, we find people in an optimistic endeavour to take on more loads in the hope of improving the load factor, only to find that it has in fact worsened. The electrical industry is making a bid to wrest the cooking load from the gas industry. This is a heavy load and it has a high consumpton peak and a resulting load factor worse than that which the electrical industry already has. If the electricians were to succeed in taking over a substantial part of this load, the cost of electricity would rise. The increased cost would, of course, have to be met by the consumer, but not necessarily by those consumers who caused the rise in price. It would probably be extracted from the industrial consumer who has no alternative supply of power and is therefore most likely to pay the price increase demanded.

A sense of proportion—that is what Mr. Birks calls for. Let us endeavour to see the wood, whatever the beauty and exquisite tracery of the individual tree. Let us endeavour to envisage the jig-saw parts as a composite pattern. Let us try to see things whole. And—above all—never let us mistake tolerance as a convenient cloak for guesswork. Tolerance—a sense of proportion—is, as Mr. Birks so admirably said, 'a deliberate and rigid means of controlling inaccuracy that requires much experience in its application and understanding.' But it is 'an economic expedient of great value, merging all the technical, economic, and commercial interests, to ensure success in a public service and to provide the best product consistent with the lowest price.'

CONFIDENCE IN THE FUTURE

ANY fears that may have been felt regarding possible changes in the relationships which have for many years existed between the members of the Society of British Gas Industries and their customers as a consequence of the nationalisation of the gas supply industry should to a large extent be dispelled by the statement in the 44th annual report of the S.B.G.I. that explicit assurances have been received of the desire of the Gas Council to co-operate as closely as possible with the S.B.G.I. and that, to quote the report, 'given this desire, which is wholly shared on the Society's part, there is every prospect of a future for all those engaged in the industry which can be faced with full confidence based on a long record of successful achievement.' Two dangers which at one time seemed to threaten those relationships were the possibility that the Gas Council and the area Boards might have taken undue advantage of the power conferred on them by the Gas Act to manufacture their own plant and fittings ; and that with the administration of the industry concentrated in the hands of 12 area Boards instead of more than 1,000 separate companies and committees, the 'man on the spot' might lose contact with the contractor and the manufacturer of gas appliances. As to the first of those dangers, adequate assurances were given in Parliament that the power to manufacture equipment should not be exercised by the area Boards unless they were satisfied that the available facilities for obtaining their requirements at reasonable prices were or might become inadequate. The fact remains that such powers can be used in defence if the Boards feel they are not getting their supplies at fair and reasonable prices or that pressure is being brought to bear on the industry by its suppliers. On the other hand competition with a nationalised industry should be on a basis of fair trading and fair costing. It is still only a

month since vesting day and the full impact of nationalisation may not be felt for some time, but confidence is expressed in the report that the Society's members will 'determine their policy for the future not so much on the letter of the law but rather on the spirit which has always animated their relations with their customers, a sincere desire for the continuation of which the Council is wholly convinced exists among those in whose hands the destinies of the nationalised industry lie.' The answer to the second danger is to be found in the insistence, in all the utterances we have so far heard from area Board Chairmen, whether newcomers to the industry or not, that the individual engineer and manager must still carry practically the same responsibilities as before nationalisation. So far as purchasing is concerned, we take this to mean that although the individual may not do the actual buying, he will at least be responsible for selection and recommendation, and the contractor and manufacturer will still need to study and cater for the particular needs of differing localities.

On the plant side, although early difficulties in regard to steel allocations were evened out during the year, members would have been happier if certain materials, notably silica refractories, had been less scarce, but discussions between producers and users promise to remove the danger of an actual crisis. On the appliance side the needs of the industry were met overall in increasing volume, exceptions being space and water heating appliances where the high level of purchase tax, despite the reduction from 100% to 66⅔%, was penal in its effect. Exports increased satisfactorily, mainly in regard to plant, for only during 1948 was official encouragement given to manufacturers of appliances and meters to step up their export business. The Society welcomes the prospect, implicit in the fact that the nationalised gas industry will be so much in the hands of those who have brought it to its present status, that competition between the fuel industries will continue to benefit the consumer. The report records continued friendly relations with the Institution of Gas Engineers, to whose House Appeal S.B.G.I. members individually made handsome contributions. The chief interest which the Institution and the Society have shared in common has been the Gas Research Board, which was brought into being as the result of their joint efforts. Although its work is vital to the industry, the exact place of the Gas Research Board in the new structure remains to be defined.

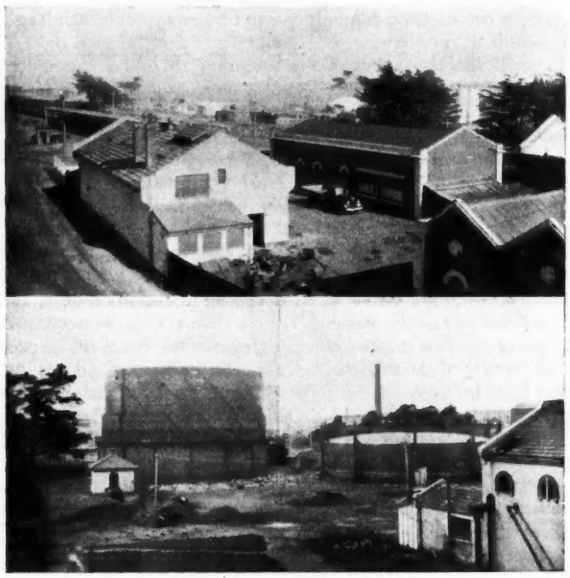
The S.B.G.I. report was written before vesting day, and, as we have said, it is too early to see exactly how things will develop, but the Society's members bring many irreplaceable qualifications to bear on their activities, and believe themselves to be well equipped to provide the necessary plant, equipment, and appliances for the needs of the nationalised industry.

GAS STAFF AFFAIRS

The past year has been an eventful period for the British Gas Staff Association, whose annual meeting is reported elsewhere in this issue. From its inception the Association, which has grown rapidly throughout the country since its modest start only three years ago as the result of the merging of the old Gas Staff Association and the Central Committee of Gas Staff Associations, has claimed strict impartiality as regards politics and its Chairman has denied that it worked in furtherance of nationalisation, but one cannot read either the Chairman's address or the series of resolutions tabled at the annual meeting without drawing the conclusion that, apart from differences on matters of detail, the change is one that is welcomed by the majority of the members. The new order came into being on May 1 without flourish of trumpets, and almost unnoticed by the public or even the gas staffs themselves, but the Association celebrated the event with a very well organised banquet during the period of the annual conference. It was unfortunate that both Mr. Sylvester, Chairman of the Gas Council, who had promised to address the conference, and Mr. Gaitskell, Minister of Fuel and Power, who was to have responded to the toast of the gas industry at the banquet, were prevented from attending, but they had able deputies in Colonel H. C. Smith and Sir Donald Fergusson, and the whole programme was one which reflected the energy and the organising skill which characterise the Association's new headquarters at Knightsbridge. The delegates at the conference rejected a motion deferred from the 1948 meeting in favour of affiliation with the T.U.C., and also defeated propositions designed to limit the eligibility of members for election to the national and regional joint councils, and asking for a five-day week, and for concessionary gas. But they passed several resolutions seeking improved conditions of service, and also one regretting that the principle of employee representation was not accepted when the area Boards were appointed. It seems from the Chairman's remarks that relations with N.A.L.G.O. are not all that might be desired, though the two bodies have been in harmony when they have sought improvements in general welfare, pay, and conditions of gas staffs.

Letter to the Editor

DEAR SIR,—I have received the accompanying photographs from my friend Mr. Harold Raymond, Engineer and Manager of the Invercargill City Council Gas Department, New Zealand. I think you will agree that the works are very neat and tidy and a credit to the New Zealand gas industry. Invercargill is in the South Island, and is the fifth largest city of New Zealand. As a matter of interest, this is the nearest gasworks to the South Pole. Due to the rapid expansion of the city a new carbonisation plant is needed, and this work is shortly being put in hand. It is hoped that a new 400,000 cu.ft. per day plant of the vertical type will be in production by 1952. Mr. Raymond tells me that in common with most undertakings in the Dominion there is a shortage of first class gasfitters, and like most gas managers over there he would be pleased to receive applications from suitably qualified, single men in this country. One of the biggest problems is the disposal of coke, as sales of this are not large enough to dispose of all that is available.



On the left of the top photograph is shown the meter shop, fitting shop and smithy repair shop in one building. On the right are the offices and stores, and in the right background the oil company's storage tanks appear behind the trees.
On the right of the two holders and meter house in the lower photograph is the north end of the retort house, stokers' lobby and drying room. The chimney in the background is at the power house.

Yours faithfully,

S. HALLIDAY,
Technical Representative,
Parkinson & Cowan, Ltd.

71, Catesfield Road,
Milton, Southsea, Hants.
June 2, 1949.

Personal

J. R. W. Alexander

Having given 20 of the best years of his life to the service of the gas industry, Mr. J. R. W. Alexander, M.A., LL.B., F.C.I.S., Barrister-at-Law, General Manager of the British Gas Council since 1945, has left Gas Industry House to the regret of all who worked with him at headquarters and with the best wishes of everyone with whom his work brought him into contact. Formerly Parliamentary Secretary and Standing Counsel to the Society of Incorporated Accountants and Auditors, he came into the industry in 1929, a brilliant young man of 33. We need not here recall either his scholastic and professional attainments or his distinctions in the first world war, for it is not our purpose to write his biography, but to join with his many friends in bidding him farewell. He was selected from among 650 candidates for the Secretaryship of the Institution of Gas Engineers just after it had received its Royal Charter, and he was especially charged with the reorganisation and extension of its work, and at once he began to make his mark on the industry at large. He initiated and organised the first International Gas Conference in London in 1931 attended by 1,500 delegates from 25 nations, and the visit of the Institution to Canada and the United States in 1933. As organiser he raised over £10,500 for the Sir Arthur Duckham Memorial Fund. He was a founder of the International Gas Union and later of the British Gas Federation and the Association of Gas Corporations.

Eight years after his entry into the industry the Institution regretfully accepted his resignation on his appointment as General Manager of Associated Gas and Water Undertakings, Ltd., and of the East Surrey Gas Company. His translation from the organisational to the commercial side of the industry did not, however, terminate or even interrupt his enthusiasm for the national affairs of the industry. He remained a familiar and welcome figure at headquarters, and was the author of 'The Planning of the Gas Industry,' the report which the British Gas Federation submitted to the Ministry of Fuel and Power in 1943. Soon afterwards the National Gas Council and the British Commercial Gas Association set up a joint exploratory committee which in the fulness of time developed into the British Gas Council. The first requisite of the consolidated body, designed as it was to meet the changed circumstances of the times, was a General Manager who not only knew the industry but had the driving force to ensure the fulfilment of the Council's objects. The obvious choice was Mr. Alexander.

Nationalisation was already on the horizon but that did not deter him from perfecting the headquarter's machinery at 1, Grosvenor Place. Never allowing his personal feelings to obtrude, he fought the industry's nationalisation battle throughout its course, through lively district meetings in every corner of Great Britain, delicate negotiations with the Ministry, consultations and briefings at every stage of the passage of the Bill through Parliament, down to the shaping of the nationalised machinery and the publication of his masterly summary of the Gas Act in 'The Structure of the Gas Industry.' No-one will gainsay that the nationalised structure is very much more satisfactory to those who have to carry on the industry than it would have been if its brief had been entrusted to less capable hands. The machinery which Mr. Alexander built up is being used, and will be increasingly used, by the new Gas Council, and there are many who feel it would have been well if the man who was mainly responsible for starting it up had remained at the controls. The industry needs, more than ever, the comprehensive and specialised experience of those who have played an effective rôle in co-ordinating the energies of a diffuse industry during the difficult years of the inter-war and post-war periods, at a time before contemplation centred on nationalisation.

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Mr. W. CRAWFORD (former Town Clerk), Mr. J. B. FERNS (Gas Manager), and Mr. W. SCOTT (Assistant Gas Manager), were entertained to a complimentary dinner by the heads of the various municipal departments at Hamilton. Mr. John R. McLean, Town Clerk, presided and the town chamberlain, on behalf of his colleagues, presented Mr. Crawford with a portable radio, while the burgh surveyor handed Mr. Ferns an ornamental bowl and Mr. Scott a fountain pen and propelling pencil. Mr. Ferns and Mr. Scott are now in the service of the Scottish Gas Board.

Mr. F. WRIGHT, A.M.I.E.E., A.M.I.H.V.E., has been appointed Branch Manager of Air Control Installations, Ltd., for their new branch office in Manchester. For the present enquiries should be addressed to Mr. Wright at 1, Vale Drive, Prestwich, Manchester (Telephone: Prestwich 1653).

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MR. ALBERT CUFLEY, Representative of Richmonds Gas Stove Co., Ltd. (Radiation Ltd.), in South-Eastern England, retired on May 31, after 47 years' service with the Company. Joining the firm at the Stratford works, in 1902, Mr. Cufley moved, after a short period, to the offices which were then in Queen Victoria Street. After acting for a time as showroom salesman in the showrooms which were opened at 164/172, Queen Victoria Street, he was appointed in the early 1920's Sales Representative for South-Eastern England, a position he has since held. Mr. Cufley, who saw active service in France during the 1914-1918 war, has now left his old home at Surbiton, Surrey, and has moved, with Mrs. Cufly, to Worthing.

Obituary

Mr. J. W. CURTIS, M.B.E., who retired last October from the position of Chief Engineer to West's Gas Improvement Company, died suddenly on May 19. As long ago as 1938 he received the customary award of a gold watch in recognition of his 40 years' faithful service to the Company, having commenced his apprenticeship in the drawing office in 1897. He took an active part under the late Mr. John West in the early stages of the development of the Glover-West continuous vertical retort. Immediately after the 1918 armistice he was appointed to inaugurate and organise the production department, of which he remained in charge until his appointment as Deputy Chief Engineer in 1935, succeeding to the chief position in 1945. He was President of the Manchester Association of Engineers for the year 1948-49.

T. A. T. writes: 'John Curtis and I worked in double harness from those early days of the continuous verticals, working directly under the eye, first of "The Guv'nor," Mr. John West, and later that of Mr. Ernest West. During the 1914-18 war he went first into munitions until we came together again in the production of the tanks of those days. Then, although he went to the production department, his work always impinged on design and we continued to work together until in 1935 collaboration became more intimate still. Out of working hours he was a good, all-round sportsman; at cricket, tennis, football, golf out of doors, at chess, bridge billiards, indoors, he had rendered a good account of himself. His sudden removal from our midst, just when he was beginning to enjoy a little more well-earned leisure, was a great shock to those of us who for nearly 50 years had counted him as a loyal friend and a most able and stout-hearted colleague.'

Appointments

The following further appointments have been made by the West Midlands Gas Board:

T. F. E. RHEAD, M.SC. (Chief Chemist to the Birmingham Gas Undertaking), as Scientific Adviser to the Board.

J. K. BARNETT (Editor of the Birmingham Magazine), as Editor of the Area Magazine.

W. MACNAUGHTON, M.INST.GAS E. (General Manager and Chief Engineer of the Wolverhampton Undertaking), as Deputy Divisional Manager in the Wolverhampton and District Division. Mr. Macnaughton will continue to act at Wolverhampton.

F. H. BATE, B.SC. (Engineer at the Birmingham Undertaking, Windsor Street Works), as Divisional Engineer in the Wolverhampton and District Division.

S. K. HAWTHORN, M.INST.GAS E. (Chief Engineer at the Birmingham Undertaking), as Divisional Engineer in the Birmingham Division.

R. J. KIRKCALDY (Assistant Constructional Engineer of the Smethwick Undertaking), as Constructional Engineer in the Walsall Division.

R. W. ADAMS (Assistant Secretary of the South Staffordshire Mond Undertaking), as Secretary in the Walsall Division.

W. H. BLUNDSTONE, B.SC., A.M.INST.GAS E. (Engineer and Manager at Malvern), as Engineer and General Manager of the Hereford Undertaking.

E. H. GREENAWAY, M.INST.GAS E. (Engineer and Manager at the Stourport Undertaking), as Engineer and Manager of the Malvern Undertaking.

C. J. PARSONS. M.INST.GAS E. (Engineer, Manager and Secretary of the Stone Undertaking), as Engineer and Manager of the Stourport Undertaking.

L. S. WRIGHT as Assistant Engineer of the Stoke-on-Trent Undertaking.

P. C. BILLINGS, C.A. (Assistant Accountant at the Cradley Undertaking), as Accountant at Cradley.

Diary

June 10.—**London and Southern Junior Gas Association:** Annual General Meeting.
June 11.—**London and Southern Junior Gas Association:** Summer Visit to Southampton.
June 13-14.—**Institution of Gas Engineers:** 86th Annual General Meeting, Institution of Civil Engineers, Great George Street, London, S.W. 1. (For full programme see *Journal* of May 11, p. 331.)
June 15-20.—**International Gas Union:** Fourth International Gas Conference, Institution of Civil Engineers, Great George Street, London, S.W. 1. (For full programme see *Journal* of April 6, p. 45.)
June 18.—**Scottish Junior Gas Association (Eastern District):** Annual Outing.
June 22.—**Manchester District Junior Association of Gas Engineers:** Ladies Day. Visit to works of Southport Gas Department.
June 23.—**Gas Council, Coke Department:** Technical Coke Committee, Gas Industry House, 2.30 p.m.
June 24.—**Northern Junior Gas Association:** Annual General Meeting, Seaburn Hotel, Sunderland.
June 24.—**Waverley Association of Gas Managers:** Annual Meeting, Y.M.C.A. Hall, Edinburgh, 10.15 a.m.
June 25.—**Wales Junior Gas Association:** Summer Meeting.
June 25.—**Western Junior Gas Association:** Summer Meeting and Ladies' Day, Exeter. Inspection of Exeter Gasworks, 11 a.m.; luncheon, Rougemont Hotel, 12.45 p.m.; motor coach tour, 2 p.m.
June 30.—**Gas Council, Coke Department:** Coke Committee, Gas Industry House, 11 a.m.
June 28.—**Southern Association of Gas Engineers and Managers:** Summer Meeting, Taunton.
July 1.—**Manchester District Association of Gas Engineers:** President's Day, Blackburn.

News in Brief

The Following Amendment to the regulations relating to the Associate Membership Examination has been agreed by the Institutions of Civil and Gas Engineers: 'Candidates entering for the Joint Seciton "B" Group VIII examination will be required to take only the morning paper of three hours duration in engineering drawing and not two papers as quoted in the Education Regulations 1948 Revision (Communication 330).'

Thirty-Six Drivers of the Sheffield and Rotherham Division of the East Midlands Gas Board received safe driving awards from the Chief Constable of Sheffield, Mr. G. E. Scott. Mr. W. Woodcock, Divisional Transport Officer, presided, and Mr. Scott was thanked by Mr. E. H. Harman, General Manager, and Mr. F. G. Pyper, Divisional Engineer. Among those who received awards were the following five drivers with over 25 years' service each: J. R. B. Rawson (34 years), H. Allen (32), C. Fieldsend (31), F. Leadbeater (28) and J. F. Addy (28).

The Waverley Association of Gas Managers are holding their Annual Meeting in the Y.M.C.A. Hall, 14, South St. Andrew Street, Edinburgh, on Friday, June 24, at 10.15 a.m., when the President, Mr. D. M. Kerr, Engineer and Manager, Gasworks, Kennoway, will take the chair and deliver his Presidential address. Thereafter, the members will have Lunch at the North British Station Hotel, Princes Street. In the afternoon golf and bowling competitions will be held; the former over Baberton Golf Course, Juniper Green, and the latter on the Juniper Green Bowling Club's Green, starting at 2.30 p.m.

Modified arrangements for the allocation of fuel for commercial glasshouses were announced by Mr. T. Williams, the Minister of Agriculture and Fisheries, on June 2 in the House of Commons. It was intended, he said, that for the 1949-50 season growers who need large coal, including anthracite, would be required as before to use at least a proportion of their heated glasshouse space for food crops. The proportion, however, would be reduced to one-half for those who grew flowers before the war and to two-thirds for other growers. No such requirement would apply to growers who used coke or other fuels.

The Social and Recreation Club of George Wilson Gas Meters, Ltd., recently concluded its winter programme with a dance at the Pilot Hotel, Coventry. During the evening a cup was presented to the winner of the Works Table Tennis Championship, Mr. W. D. Wilson, Chairman and Managing Director, and a plaque to the runner-up, Mr. J. Thacker. On May 21 the Social Club organised an outing to Blackpool, which again was greatly enjoyed and well attended. Those participating took full advantage of the many attractions which Blackpool has to offer, and while the return home was at an early hour in the morning, the day's outing was voted a complete success.

Approval has been Given by Peterborough Joint Education Board to the installation of a gas-heating system in the new Peterborough Technical College at a cost, including professional fees, of £62,300.

At a Meeting of Professional Engineers, at Glasgow, on May 6, convened by the Engineers' Guild, it was unanimously agreed to establish a Scottish Branch of the Guild with Headquarters in Glasgow, and a provisional committee was elected to deal with Branch development.

The Northern Gas Board has informed Stockton-on-Tees Town Council that extensions are planned to Stockton gasworks on a much bigger scale than originally intended. The Corporation has approved in principle the sale of the Richmond Street Depot to facilitate the extensions.

A Suggestion that the National Coal Board should begin as soon as possible on the erection of low temperature carbonisation plants in County Durham has been turned down by a committee of experts appointed by the National Association of Carbonisation Officials and Scientific Technologists. The committee asserted that millions of pounds had been lost on research work in this field during the past 30 or 40 years. The committee includes Messrs. W. Dowson (Bankfoot Works, Crook); W. Robson (Lambton Coke Plant); F. Stephenson (Dean and Chapter Colliery Central Laboratory); and M. Hind (Bankfoot Works, Crook).

The Golf Competition of the Eastern Association of Gas Engineers and Managers was played over the course of the Frinton Golf Club on May 19. The Turner Trophy was won by S. R. Hughes, late of the Stowmarket Gas Company and now out of the gas industry but at the time of the competition a member of the Association, with a net score of 77. The George Wright Cup was won by L. F. King, London (Associate), with a gross score of 88. Prizes were won as follows: W. J. Collins Garrard (Ipswich) with net score of 75, best score over the first nine holes; G. Ewart (London), net score 75; R. C. Wardell (Boston), net score 76; H. H. Redwood (Newmarket), prize for nine hidden holes.

The South Wales Branch of the Purchasing Officers' Association entertained the National Council of the Association to dinner at Cardiff on May 20. The toast of 'The Association' was proposed by Mr. N. R. R. Brooke, Director of Guest, Keen and Nettlefolds (South Wales), Ltd., who said that the importance of an efficient purchasing department in any organisation could not be too strongly emphasised. The sellers' market conditions which had prevailed for the last 10 years were now fast disappearing and buying was no longer a question of obtaining delivery on almost any terms. He therefore particularly welcomed the Association's education and training scheme, which would enable young buyers to be given valuable theoretical training to supplement their practical experience. He said that above all the purchasing officer must be a diplomat, willing to co-operate to the very fullest extent with the other branches of management. The President of the Association, Mr. F. O. Ashmore of The Calico Printers Association, Ltd., replied and called attention to the rapidly increasing recognition which the Association, with a membership of 2,000 and with 24 branches and groups in the principal centres of the country, was now receiving. The Lord Mayor of Cardiff, Alderman R. G. Robinson, J.P., responded to the toast of 'The Guests.'

CHANGE-OVER CELEBRATIONS

Members of the Southern Association of Gas Engineers and Managers (Western District) inspected the Newton Abbot gas undertaking on May 19. The visit was followed by a luncheon on the invitation of the former Directors of the Newton Abbot and District Gas and Coke Company. The toast of the Association was proposed by the Past-Chairman, Mr. C. L. Vicary, who said that he was most sorry to leave the Company, but he knew that it was in good hands. Mr. William Verity, Chairman of the Western District, replied.

The history of the undertaking, as outlined for the guests, has been one of continuous technical progress since the absorption of the Bovey Tracey Gas Company in 1938. In 1939 compressors were installed in duplicate with a capacity of 20,000 cu.ft./hr. at 20 lb./sq.in. At the same time a 4-in. main C.I. with Stanton Wilson Joints, six miles in length, was laid to Bovey with provision for further extensions. The cost of the complete scheme was £5,000. Between 1939 and 1942 existing retort settings were completely rebuilt. In 1944 a 200,000 cu.ft./day automatic operated C.W.G. plant, complete with building was purchased from Swindon Gas Company, who had it removed from Cirencester. This plant was dismantled and re-erected by Humphreys and Glasgow, Ltd. In 1945 the congested coke yard was improved, and the present coke bunker, elevator and screen were erected on what was then the only available site.

Attention was then paid to the wet purification plant, which comprised a C. & W. Walkers patent purifying machine of 1889

vintage and a small Livesey type washer. A Whessoe W.D. detarrer and a static washer were installed, both units having a capacity of 1 mill. cu.ft./day, and were brought into use in 1946. The water gas plants consisted of a Dempster Delwick C.W.G. plant of 1911, and a West and Partners blue gas plant, which was converted into a producer gas plant.

The retort settings as they became due for resetting were rebuilt on the recirculator principle, and the latest type of 'M' head was fitted to the charging machine. A Le Fleuve conveyor was installed in 1946.

Work in hand comprises the preparation of a foundation for a small C.W.G. relief holder to enable the existing holder to be removed and the site to be taken into the yard. The erection of a new Rootes type exhauster and steam engine in a new position, and the eventual dismantling of the existing exhauster house is also being undertaken.

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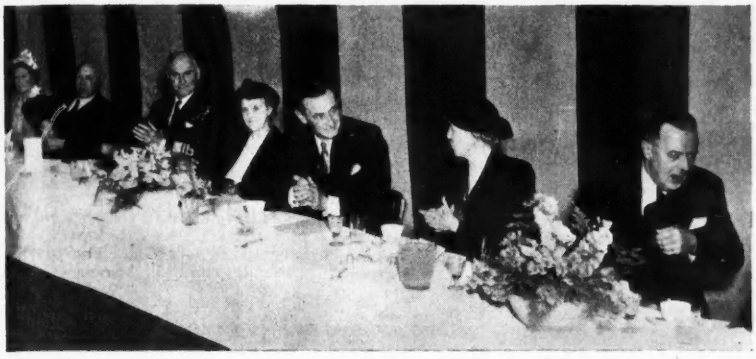
The Chairman, Councillor J. H. I. Radcliffe, and members of the Gasworks Committee made a formal inspection of the works of the Stalybridge Gas Department on April 29. Members of the Council and chief officials accompanied the Committee, and the chief guests were the Mayor, Councillor Tom Kenworthy, Col. W. M. Carr, Chairman of the North Western Gas Board, and his Deputy, Mr. A. Henshall. Mr. R. J. Restall, Engineer and Manager, made presentations to a former Chairman of his Committee and to the present Chairman, Councillor J. H. I. Radcliffe.



Included in this photograph are Vice-Admiral L. V. Morgan, C.B.E. M.V.O., D.S.C., and Messrs. O. R. Guard and S. E. Whitehead (Chairman and Deputy Chairman, Southern Gas Board).

"COUNTY" MEETING: PORTSMOUTH

Photos by Walter King, Ltd.

BY invitation of the Chairman and Directors of the former Portsmouth and Gosport Gas Company members of the Southern Association of Gas Engineers and Managers (Eastern District) visited on May 31 the Hilsea Works which were open to inspection by courtesy of the Southern Gas Board. On arrival at the works the party was entertained at lunch. In a short speech, Dr. F. E. Beddow, D.SC., J.P. (past-Chairman of the Company), welcomed members and their ladies and stressed the importance of meetings and making friends and the necessity of personal contacts. He said he was pleased to see so many distinguished gueses, including the Lord Mayor and Lady Mayoress (Ald. and Mrs. John Privett), Vice-Admiral L. V. Morgan, C.B.E., M.V.O., D.S.C. (Admiral Superintendent of H.M. Dockyards), and Mrs. Morgan, Mr. and Mrs. O. R. Guard, Mr. L. P. Ingram (President of the main Association), Mr. J. H. Dyde (Deputy Chairman, Eastern Gas Board), and Mr. T. C. Battersby (Watford). For 75 years, he continued, the Southern Association had been in existence and there was no doubt that it had assisted in raising the status of the gas engineer. He submitted the toast of the Southern Association (Eastern District).

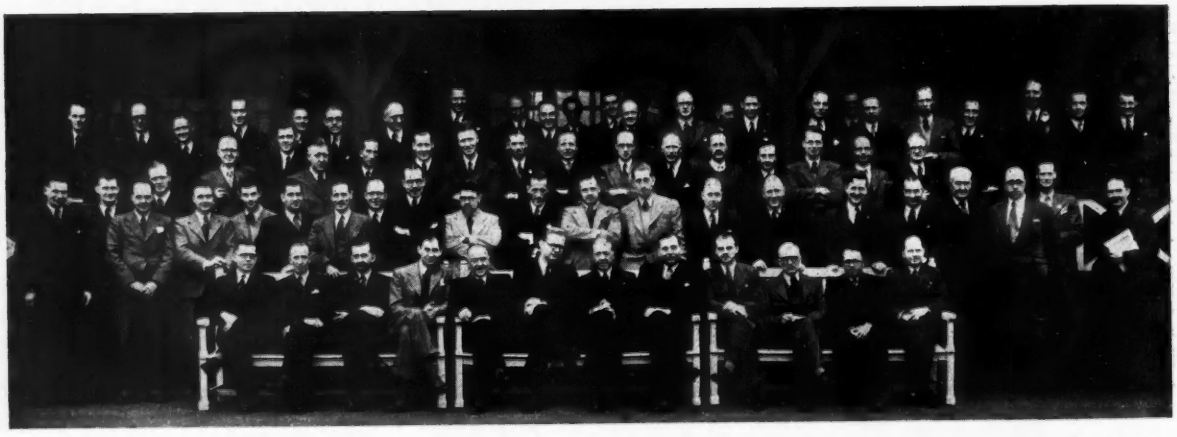
Mr. W. K. Tate, M.A., A.M.I.C.E., M.INST.GAS E. (Chairman of the Eastern District), in reply thanked the Chairman and Directors for entertaining them, Mr. Guard for allowing them and Mr. Ingram in coming to visit the works. He mentioned how much he had learnt from seeing other works and hoped they would all benefit and thanked the employers of the Company for co-operation and hard work during the past 3½ years.

After a thorough examination of the works the party adjourned for tea, and were again joined by the ladies, who had inspected H.M.S. Victory (arrangements kindly made by Vice-Adm. Morgan). Mr. L. P. Ingram thanked everyone for their hospitality and Mr. S. E. Whitehead, representing the former Board of Directors, replied briefly.

The day was successful, even more so by virtue of the excellent arrangements which had been made and the delightful informality.

Left to Right.—Mr. W. K. Tate, Manager, Eastern Division, Southern Gas Board; Dr. F. E. Bedow, J.P.; Mr. L. P. Ingram, President, Southern Association of Gas Engineers and Managers.

Members of the new Council and a few of the distinguished guests of the Wales and Monmouthshire Association of Gas Engineers and Managers at the Annual Meeting at Colwyn Bay. In the picture are the Mayor of Colwyn Bay (Councillor W. R. Blackburn) and on his right Mr. H. Blythe (President) Mr. T. Mervyn Jones and Mr. R. S. Snelling (Chairman and Deputy Chairman of the Wales Gas Board), Mr. J. F. Rust, Mr. J. Wood, Mr. W. Clark Jackson, and Mr. J. Powdrill. Second from the Mayor (to his left) is Mr. Darrell W. Rees, Hon. Secretary and President-Elect.



Sixty members of the London and Southern Junior Gas Association spent an interesting day at the Stanton Ironworks, Nottingham, last month, inspecting the training centre, the plant for the production of metal-spun pipes, and the concrete plant. Here they are seen with Mr. W. Boden, Manager of the Technical Service Section, Mr. S. Woodhouse, Manager of the Cast Iron Sales Department, and Mr. R. Kimber, London Representative. Mr. L. J. Clark, President of the Association, is in the centre of the photograph.

As reported in our columns recently, the visit of the Southern District (Sussex Area) Circle to the Works of R. & A. Main, Ltd., on May 11, was the first Circle visit of its kind since nationalisation, and the first works visit ever undertaken by this youngest Circle. Seventh from the left in this special Gas Journal *photograph is the Secretary, Mr. L. S. Sopp (Brighton), on whose left are Mr. C. Marley (Director and General Manager), Mr. H. Simmonds (Eastbourne), Chairman of the Circle, and Mr. H. B. Collins (Brighton), Vice-Chairman.*

SOCIETY OF BRITISH GAS INDUSTRIES

POINTS FROM THE ANNUAL REPORT

THE Council of the Society of British Gas Industries records in the forty-fourth annual report on the work of the Society that Sir Frederick West consented to serve a second term as President. Mr. H. S. Cheetham succeeded Mr. D. Rider as Chairman of the Council, and Captain W. Gregson served as Vice-Chairman.

Nationalisation

A matter of importance in the Gas Act was the power vested in the Gas Council and the area Boards to manufacture plant and fittings except for export. There was precedent in that these powers had been vested in the central authority under the Electricity Act and in view of the decentralised structure proposed in the Gas Act their extension to cover the Area Boards followed. The position of the Society's members was, however, sympathetically considered. The Bill as drafted contained a provision that if powers to manufacture were exercised by the Gas Council it would be an obligation on the Gas Council to secure that the revenues arising were not less than sufficient to meet the outgoings properly chargeable to revenue account taking one year with another. In the case of the use of these powers by the area Boards there was no such provision, but the Lord Chancellor agreed in the House of Lords that if the area Boards were to implement their powers to manufacture they ought not to subsidise such activities out of the price of gas. Accordingly he accepted an amendment to ensure as with the Gas Council that if area Boards exercised these powers they should do so only on a financially economic basis. Moreover, in the House of Lords the Lord Chancellor himself moved to add words to the Bill providing that an area Board should not use these powers to manufacture unless they were satisfied that the available facilities for obtaining plant and fittings at reasonable prices were or might become inadequate.

The essence of the matter seems to have been on the one hand the Government's anxiety that the nationalised industry should obtain its supplies at fair and reasonable prices, and in consequence the reasonable assumption in the Council's view is that the use of these powers would only arise in defence against pressure being brought to bear upon the industry by its suppliers. The Council's concern on the other hand in regard to the Gas Act was that to the extent that there might be competition with a nationalised industry it should be on a basis of fair trading and fair costing and that there should be reasonable safeguards for the interests of the Society's members. The Act seems to afford a reasonable compromise between these two points of view, but the Council is confident that the Society's members will determine their policy for the future not so much on the letter of the law but rather on the spirit which has always animated their relations with their customers, a sincere desire for the continuation of which the Council is wholly convinced exists among those in whose hands the destinies of the nationalised industry lie.

The Gas Industry

While the circumstances attending nationalisation have dominated the affairs of the gas supply industry during the past year much useful work has been done in co-operation with the Society. The Joint Consultative Committee for Domestic Uses has met on a number of occasions to discuss common problems, and in regard to many of them it has been possible as a result to take concerted action to the mutual benefit of all concerned. There has been close co-operation in the presentation of a case on behalf of the industry in regard to purchase tax. An arrangement has been entered into by the Society's members concerned whereby heating, cooking, and water heating appliances are being made available to National Training Colleges for Teachers of Domestic Science and to Domestic Science Centres on favourable terms. There was close co-operation in connection with the industry's exhibit at the Ideal Home Exhibition in London. The Joint Consultative Committee for Industrial Uses also increased its sphere of activities; through it in particular the Society's members concerned assisted in the industrial gas exhibit at the B.I.F., Birmingham.

The Society's relationships with the Institution of Gas Engineers continue on an entirely friendly basis and good work is being achieved by committees of that body on which the Society is represented, such as the Joint Lighting Committee and the Meters Committee. As the result of the work of the former there was close co-operation in connection with the 11th meeting of the International Committee on Illumination held in Paris in the summer, two of the five official delegates from the Institution being S.B.G.I. members. Support of the annual conference of the Association of Public Lighting Engineers at Eastbourne was also organised through the Committee. A number of the Society's members had stands at an exhibition organised in connection with the conference. A representative of the Society is serving on a small *ad hoc* panel which is considering the preparation of a code of practice for the safe operation of electrostatic detarrers. The Society's members individually have made substantial contributions to the I.G.E. House Appeal.

Gas Research Board

The chief interest which the I.G.E. and the S.B.G.I. share in common is the Gas Research Board which was brought into being as the result of their joint efforts. The occupation of the new headquarters at the Abbey, Beckenham, is now an accomplished fact, the degree of centralisation thus rendered possible forming an important milestone in the development of the Board's work. The main purpose of the work of the Board as a Research Association remains the pursuit of fundamental knowledge and a number of long-term projects are being actively pursued. Plans made for intensifying combustion research have been implemented and a new team was fully engaged for the greater part of the year on the Joint Research Committee programme at Leeds University. In addition certain adjustments were made to the research programme in order to introduce a proportion of short-term projects. Two such projects, one dealing with the hardening of oxide in purifiers, the other with the mechanical breakage of coke, have been given special priority. Interim reports in regard to both of them have already been issued and both projects are being continued. It is felt that the Gas Research Board, serving an industry which provides facilities for full scale experiments under a variety of conditions, is particularly suited to undertake short-term projects of this type. The Society's six representatives on the Council of the Gas Research Board continue to take a very active interest and to play an important part in the work of the Board.

Home Trade

The needs of the gas supply industry have been met overall in increasing volume during the year by the Society's members. The exceptions have been gas space heating appliances and gas water heating appliances where the very high level of purchase tax, despite the reduction in the summer from 100% to 66⅔%, has been penal in its effect. Cooker and meter production have been running at a higher level in 1948 than in 1947, though capacity is available for an even greater production than has been achieved. Demands for appliances for new buildings have not come up to immediate post-war estimates, it being now generally recognised that the volume of house building started in the two years after the end of the war, together with the amount of other building work was too great for the resources in labour and materials available to the building industry. This resulted in too thin a spread of labour and materials over the amount of work in progress, and a serious delay in completions ensued. Latterly attempts to get the whole building programme into better balance have achieved a reasonable measure of success. The Ministry of Works has continued to act as the production authority for appliances and meters.

The production of plant for the industry has kept the Society's members so engaged well occupied during the year. It is, however, a matter of considerable concern that the obstacles in the way of accelerating the completion of work of this type persist. For instance, in the early part of 1948 the industry was faced with a serious cut in steel allocations for gasworks plant. Since allocations of steel for repair and maintenance work had to be maintained, the actual effect of the cut promised to be about 50% on new work and major reconstructions. Happily the urgent representations that were at once made were reasonably successful, and it was possible to a great extent to even matters out over the year as a whole. Determined efforts have also been made during the year to focus attention at the highest possible level on the bottleneck in production caused by silica refractories. Discussions between the using industries and the producing industry have been fruitful of results which it is hoped will remove the dangers of an actual crisis that otherwise on the basis of available statistics seemed to be inevitable in a matter of little more than a year ahead. The Ministry of Fuel and Power has continued to act as the production authority for gasworks plant.

The Society co-operated on many questions during the year with the Federation of British Industries, including production efficiency, voluntary limitation of advertising, restrictions on capital expenditure, and so on. It is a matter of gratification to the Council that the F.B.I. is becoming increasingly active in matters of broad industrial policy. The Society has also throughout the year continued its active participation in the work of the British Standards Institution. At the invitation of the National Coal Board (Carbonisation Branch), the Society prepared and sub-

mitted for consideration contract conditions for coke oven and by-product recovery plant.

Export Trade

The Gas and Coke Oven Industries Export Group which the Society staffs and administers, continued to deal with raw material allocations for the export of gasworks and coke oven plant, appliances, and meters. The volume of export business covered by these allocations increased substantially during the year to a total of approximately £3 mill. The bulk of the increase occurred in plant exports, since only this year has any official encouragement been given for the first time to the manufacturers of appliances and meters to step up their export business. There are good prospects that this encouragement will bear fruit in succeeding years, though inevitably progress will be gradual since many types of appliances on which the industry had to concentrate to meet the requirements of the national housing drive are not readily saleable in export markets. The Council, thanks to the kindness of two members of the U.K. Engineering Mission to Canada, has been able to place a special report on the gas industry in Canada at the disposal of all the Society's members. The Commonwealth countries provide the natural outlet for the industry's export business, but in addition progress has been made during the year in other markets, such as those in Europe, the Middle East, and South America.

Advantages of Competition

Looking back over the years the Council is satisfied that the competition which has existed between the fuel industries of the country has been to the benefit of the consumer. Now that the Government has gathered to itself at Westminster the control of these industries the pressure of competition must presumably be expected to follow it there. For this reason it is a matter of satisfaction to the Council that the destinies of the nationalised industry will be so much in the hands of those who have built it up to its present great status in the industrial and domestic life of the nation. The Society's members believe that the gas industry has still the same important part to play in the future on such grounds as high efficiency of conversion of coal into refined products, gaseous, liquid, and solid, and the supply of cheap and convenient smokeless fuel. Provided that the consumer is given freedom of choice there is complete confidence in the future demand for the irreplaceable products of the gas industry.

This is the last year in which the Society, founded in 1905, will work with the gas supply industry as it has existed through its long history. The Council has under constant review the steps it may be necessary for the Society to take, whether organisational or financial, to equip itself adequately in the interests of members to meet whatever new situation may emerge from the nationalisation of the gas supply industry. In their service to the gas industry the Society's members are able to draw on the knowledge and experience of many industries and many professions. The staffs of S.B.G.I. members include specialists who have made their mark on the progress of the industry, many of the most important improvements being associated with their names. Through an active research and development policy, by pursuing up-to-date manufacturing methods, by co-relating experience gained within the industry, by acquiring foreign improvements, by adapting experience won in other industries, and generally by developing a know-how which is irreplaceable, S.B.G.I. members believe themselves to be well equipped to provide the necessary plant, equipment and appliances for the needs of the nationalised industry. The Council has received explicit assurances of the desire of the Gas Council to co-operate as closely as possible with the S.B.G.I. and, given this desire, which is wholly shared on the Society's part, there is every prospect of a future for all those engaged in the industry which can be faced with full confidence based on a long record of successful achievement.

The following appointments have been made for the 1949-50 session: *President,* Lord Dudley Gordon. *Chairman,* Captain W. Gregson. *Vice-Chairman,* F. A. Hooper. *Chairmen of Sections:* Section 1 (retort setters), J. F. West; 2 (retort mountings, condensers, and purifying plant), B. C. Morton; 3 (Conveying plant and labour-saving machinery), F. B. Holmes; 4 (gasholders), L. Hartley; 5 (meters), N. L. Smith; 6 (gas stoves), P. D. M. Aird; 7 (gas lighting equipment, gas fittings, and burners), P. Crawford Sugg; 8 (manufacturers and contractors for gasworks not included in the foregoing or following sections), W. H. G. Roach; 9 (industrial gas equipment), J. Fallon; 10 (fireclay goods), Frank West; 11 (exhausters, boosters, and compressors), G. F. Chambers; 12 (chemical and residual plant), Major V. F. Gloag; 13 (water gas plant), L. Walker; 14 (contractors of coal for gas manufacture), no nomination; 15 (tubes and pipes), H. H. Stone; 16 (water heaters), G. Ewart; 17 (scientific instruments), R. E. Ashton; 18 (coke ovens), H. Smith. *Elective Members:* A. Watson, G. W. Allott, H. F. Potter, T. F. C. Potterton, D. Rider, and H. S. Cheetham. *Ex-Officio Members:* R. B. Potter (Hon. Treasurer) and Colonel O. B. F. Planck (Hon. Secretary).

GAS STAFFS CELEBRATE NATIONALISATION

MEMBERS of the British Gas Staff Association from all parts of the country totalling, with ladies and visitors, over 300, attended a dinner at the Connaught Rooms, London, on May 27 to mark the nationalisation of the gas industry. The annual conference of the Association, to which we refer on page 565 of this issue of the *Journal,* had opened at the Hoare Memorial Hall, Church House, earlier in the day and was continued on the following day.

Mr. **W. E. Webb,** J.P., Chairman of the Association, presided at the dinner and announced apologies for absence from Mr. Hugh Gaitskell, Minister of Fuel and Power, Mr. A. E. Sylvester, Chairman of the Gas Council, and Mr. W. E. Hutchison, Chairman of the South Eastern Gas Board. He extended a cordial welcome to Sir Donald Fergusson, Permanent Secretary of the Ministry, Colonel H. C. Smith, Deputy Chairman of the Gas Council, Sir John Stephenson, Chairman of the Eastern Gas Board, and Mr. G. le B. Diamond, Chairman of the West Midlands Gas Board. Proposing the toast of the gas industry, Mr. Webb said that all the thousand or more gas undertakings which were nationalised on May 1 had commanded and enjoyed the loyalty and support of their staffs which were the peculiar characteristics of the gas industry. They hoped that in the years to come they would not only preserve the privileges they had had in the past, but that they would be enhanced. The Minister had promised that under nationalisation there should be consultation at all levels, and the members of the Association desired that not only themselves but the nation at large should benefit from the prosperity of the industry. The appointment of Mr. Sylvester and Colonel Smith as Chairman and Deputy Chairman had given them great satisfaction. Of the Chairmen of the 12 area Boards, seven were already known and respected in the industry; the other five were men with splendid records who would command public confidence. They wished the nationalised gas industry the greatest possible success, and all they asked for themselves was a fair deal.

Sir **Donald Fergusson,** responding to the toast, said that the Gas Act imposed upon the area Boards the primary duty of developing and maintaining an efficient, co-ordinated, and economical system of gas supply, and among other things they had to pay their way. That was a salutary duty, because if the industry did not pay its way it would become inefficient and it would be beaten by its competitors. The primary obligation was imposed by Parliament in the interests of the community as a whole, but it was a duty that was also necessary in the interests of that smaller section of the community, the people who earned their livelihood in the industry. Nationalisation did not mean an easier time or the elimination of competition. They would still have to meet competition, both in home and industry, from coal, oil, and electricity. Freedom for consumers to choose what fuel they should use was an essential part of civilised society. But for competition between gas and electricity in the past, the gas industry would not have achieved anything like the technical progress which had raised it to its present standard, and he believed that the new structure would help them to extend their activity at least as much as similar developments had helped coal and electricity.

If modern engineering and other sciences were to make the full contribution which they could make to the service of mankind big and expensive installations were required. It was a far cry from the small gasworks of 100 years ago, providing gas for light only, to the great modern works turning out millions of cu.ft. of gas per day, and pumping it to consumers up to 50 miles away. The industry was providing heating and cooking for millions of homes and giving employment to tens of thousands of people, besides providing the basic materials for the great modern chemical industry. Operations on such a scale involved big organisations. The Gas Act provided for 12 area Boards but allowed for the utmost decentralisation in regard to operational units. The industry had greater opportunities than ever before, and he was confident that it would not fail in those responsibilities which Parliament on behalf of the whole community, had placed upon it.

Colonel **H. C. Smith,** Deputy Chairman of the Gas Council, submitting the toast of the Association, said that although it was only four or five years old it was very forward and at times a little quarrelsome. Its members had a very important part

to play in the gas industry of the future, and he hoped they would always feel they had a fair deal. He reminded them, however, that as in war and sport, reward could only come as the result of good work and good play. Mention had been made of competition with electricity, and he suggested that one of the best way to compete with electricity was first to compete with one another. Various gas undertakings had in the past always competed with their neighbours. He was confident that the 12 area Boards were going to compete with one another, and it would be the aim of each Board to put up the best show in the country. Similarly, within each area there would be divisions and sub-divisions, and each would strive to be the best. With such a spirit animating the industry he did not fear the result of competition with electricity or any other fuel.

Mr. **F. C. Henfrey-Smith,** General Secretary, responded to the toast. He said the B.G.S.A. was the youngest staff association in the industry, having been formed in 1946 as the result of the amalgamation of the two earlier bodies which originated in the London area. As members of staffs of a nationalised industry they had varied views on the future. The nationalisation programme might mean just State capitalism, a vast compulsory grouping together under unified control; a great impersonal machine working at the behest of a few administrators issuing their instructions from afar. In such a machine employees would cease to be personalities to be considered and would become merely part of the machine to act according to the instructions received from area or divisional headquarters. Or nationalisation might mean the honest working together of those selected by Parliament to administer and every employee to run the industry for the good of the community. That spirit of co-operation and understanding could be achieved, and he hoped that Colonel Smith and the Area Board Chairmen present that evening would use their best endeavours to see that it was achieved. The Association desired that the industry should be in the forefront of good employers; that there should be consultation at all levels, and that employees should have an opportunity of sharing in the management of the Industry.

The toast of 'Our Guests' was proposed by Mr. **C. C. Holt,** Vice-Chairman, and responded to by Mrs. **Webb,** the wife of the Chairman, and Mr. **J. Lilly,** Hon. Solicitor. Sir **John Stephenson** submitted the toast of the Chairman, to which Mr. **Webb** briefly replied.

MANUFACTURE AND APPLICATION OF WATER GAS IN TOWN GAS PRODUCTION

The following is our report of the discussion on the paper by Mr. H. S. Cheetham to the Eastern Association of Gas Engineers and Managers. The paper was published *in extenso* in our issue of May 25

Mr. **J. Brown** (Liverpool) expressed apologies for the inability of his chief, Mr. Hubbard, to be present at the meeting. Mr. Brown continued that he would stress, because of the high cost of carbonising plant and the shortage of refractory materials, it was essential to operate such plants to obtain the maximum possible thermal output, coupled with the maximum life of the retorts. Experience at Liverpool had indicated that these two ideals were attainable under conditions of high throughput of coal and moderate steaming in continuous vertical retorts. They felt that the practice of attempting to make low calorific value gas—for example under 475 B.Th.U. cu.ft.—in a vertical retort is not to be advocated. In Liverpool they used producer gas for external dilution of vertical retort coal gas because surplus stepgrate producer capacity was available. Obviously it was better to use blue water gas for this purpose. They were considering a scheme for installing carburetted water gas to replace the producer gas used as diluent. Such an installation would give considerable flexibility in total output of the works irrespective of the coal gas being made. As Mr. Cheetham had pointed out, it would minimise the corrosion troubles often experienced in blue water gas plants, and would absorb excess coke production from the carbonising unit. The total daily potential output of the works had been increased 25% by external dilution with producer gas. Mr. Cheetham had calculated that it would be increased 40% if blue water gas were used. If carburetted water gas at a calorific value of 350 B.Th.U. cu.ft. were used as diluent, the output would be increased by 55%. This diluent gas would absorb roughly 20% of the coke output from the carbonising plant.

The admission of producer gas, blue water gas, or carburetted water gas to coal gas increased the specific gravity of town gas and to some extent created variations in combustion characteristics. In Liverpool they held that variations in specific gravity were of minor importance compared with wide variations in gas pressure at the consumers' appliance. For example, an increase in specific gravity from 0.51 to 0.66 (the Liverpool range) would decrease the gas output of an appliance by 10%. But a change in gas pressure from 6 in. to 2 in. water gauge—and he understood that such changes were not uncommon to-day, especially on peak loads—would decrease the gas input by 40%. They contended that if pressure was maintained at 4½ in. ±½ in. water gauge (which was Liverpool practice) the specific gravity of the gas supplied could vary between 0.51 and 0.66 without any noticeable effect on the domestic consumer's appliance.

They confirmed the author's statement that with simple modifications to a standard plant it was possible to produce carburetted water gas of 600 B.Th.U. or higher. They had found this facility invaluable in meeting abnormal demands, or in case of interruption of carbonising plant output, since this high quality C.W.G. could be diluted by producer gas.

In Table II, showing the cost of manufacture of C.W.G., the author gave the yield of tar as 15% of the oil used. Over the last 10 years at Liverpool the average yield had been only 10% of the oil used, but the tar produced had commanded as good a price as coal gas tar. The Liverpool Undertaking has had a long experience of carburetted water gas manufacture. They had proved to their complete satisfaction that the modern automatic carburetted water gas machine was very reliable and flexible, and that the cost of maintaining it in first class order was very low.

Mr. **F. A. Rhead** (Peterborough) said he was interested in Mr. Hubbard's experience with working continuous vertical retorts to the maximum possible calorific value and Mr. Cheetham's suggestions for dilution using carburetted water gas at as low a calorific value as is possible. There appeared to be an upper limit beyond which it was not practical to go in the case of continuous vertical limits, and his experience was that this would be 500 B.Th.U. gas. This was borne out by Mr. Hubbard in a figure of 497. He thought that every engineer who was faced with the problem of installing water gas and who was distributing high calorific value town gas should, subject to his purification plant and distribution system being suitable, give very serious consideration to the reduction of calorific value to 475 or even 450 and work along the lines suggested in the paper—i.e., high vertical calorific value and low C.W.G. calorific value. A possible source of high calorific value gas was not mentioned and one which might be available in certain areas was the gas produced at activated sewage disposal works and which consisted largely of methane. He thought this was well worth considering. Another possible source for enriching blue water gas was coal gas tar, and he would like to know if any steps had been taken to investigate the use of this hydrocarbon, and, if so, with what result.

He did not feel that the argument put forward in the paper that mechanically operated plant could be hand operated for a period in the event of an electrical breakdown gave a true representation of the case unless steam operated blowers were used. Other ancillary plant, including the automatic grate, would come to a standstill, and hence the manual operation would be effective for an extremely short time only. In favour of the hydraulic operators it might be said that at least one system of this incorporated an automatic arrangement whereby the plant was completely shut down and put into a safe position should the electricity supply fail.

Mr. **Bernard Clarke** (Stamford) remarked that, the plant at Stamford continued to operate satisfactorily and efficiently and that repairs and maintenance had been low. Emphasis had rightly been laid on the economics of diluent gas. He thought that blue water gas was preferable to producer gas as a diluent and it was not always possible to give a compensatory pressure to balance the increased specific gravity in order to deliver the same B.Th.U. at the consumers' appliances. Pressures were so frequently inadequate that the extra restriction on the distribution system set up by increasing the specific gravity was to be deprecated.

It was accepted that the greatest efficiency in carbonising practice was a tight retort, and if dilution was necessary then the admixture of a carefully controlled diluent gas was desirable. The paper had, he believed, established the case for blue water gas. It was difficult to establish the production costs of blue water gas when steaming in vertical retorts. It was well to bear in mind the effect of steaming on the life of plant—the uncertainty of the water gas reactions—due to a number of factors; the delay in delivery and high costs of plant. The coke market

position was changing, and it might well be that the cumulative effect of extended life and increased capacity of carbonising plant, coupled with a control on the coke market, would reveal a more favourable comparison of costs for blue water gas production in automatically operated plants than was generally imagined. It was a question of economics, and the paper submitted should stimulate a more detailed consideration—under changing conditions—of blue water gas production and its utilisation.

Mr. **E. H. Winch** (Cambridge) remarked that water gas plants played a big part in the maintenance of gas supplies during the war and since, and it would seem that they would continue to do so. The author made reference to capital costs in connection with water gas manufacture and he (the speaker) was tempted to suggest that his paper would be even more valuable had it contained comparative costs of coal gas and water gas manufacture. He had been interested to peruse the statistics which appeared at the end of the paper, and among other things he felt that in connection with Table 2, it would be difficult on the average works to maintain a coke consumption as low as 35 lb. 1,000 cu.ft. of C.W.G. when making 500 B.Th.U. gas. He assumed that the costs per therm of C.W.G. were costs into holder, and he felt that the capital charges and the share of general works charges should be included to avoid confusion on the probable total cost of C.W.G. manufacture. It would be of interest to know the amended costs per therm on that basis.

He would like also to refer to the capacity of water gas plants. Capacity should not be guaranteed on fuel conditions which were virtually unobtainable on the average works, but should be guaranteed on standards more closely approximating to those existing under present day conditions. In this connection also it would be interesting to have the author's views on the effect of designing C.W.G. generators to use graded coke of smaller sizes, say from ¾ in. to 1½ in., stocks of which were embarrassing some of the larger undertakings at the present time. How would this affect the cost of plant for a given output, and also the efficiency under those conditions and if the use of larger sizes was reverted to subsequently.

He would like to ask whether any comparative data on oil cracking efficiencies which are obtainable with checkered and non-checkered carburettors could be given. Was there any fundamental difference in design of checkerless carburettors which would prevent or materially impair the efficiency if the checker bricks were removed from a checkered carburettor, if it became desirable to use a heavier oil than that for which the original carburettor was designed? He would also be interested to know whether information could be given regarding the difference in maintenance costs of hydraulically and mechanically actuated mechanical operators. Was it feasible to operate hydraulically actuated plants by hand in the event of failure of the hydraulic equipment? What reduction of capital cost was obtained by installing a compensating device in place of the conventional relief holder, and was the compensating device equally applicable in cases where the hourly rate of taking water gas was considerably less than the normal hourly output of the plant to which it is connected? Finally he would ask what, in the author's opinion, was the minimum capacity of C.W.G. plant and B.W.G. plant which could be economically equipped with waste heat boilers, and what was the minimum capacity of plant for which mechanical handling of ash and breeze could be justified.

Mr. **F. N. Howes** (Chelmsford) asked whether the author could give them a comparison of post-war and pre-war costs taking into account costs of plant to-day and of repairs and maintenance. He (the speaker) thought that grit catchers were expensive, had a short life, and were difficult to renew. He also asked what was the minimum size of water gas plant for automatic operation.

The Author's Reply

Mr. **Cheetham** said that the information given by Mr. Brown, concerning their experience in Liverpool, was most valuable and would, no doubt, be very helpful to those who had water gas problems under consideration. Concerning the percentage by volume of the gas oil which was recovered as tar, Mr. Cheetham said that the figure of 15% was based on a number of tests carried out over a period of years. Results did, of course, vary from works to works, but it had been found that with gas oils available to-day there was a tendency in a number of cases for the tar recovered to be even higher than the 15% mentioned.

Mr. Rhead's views in regard to the production of higher C.V. gas in vertical retorts and the possibility of sending out lower quality gas were most interesting. There was no difficulty in making use of sewage gas, and probably the most satisfactory method would be to employ this gas as a cold enricher of blue water gas on the same lines as 'tail' gases from oil refinery plants were being used in a number of cases.

In regard to oil cracking efficiency when using gas oil, Mr. Cheetham said that he could not recall seeing any results of comparative tests which might have been carried out. He considered it most inadvisable to dispense with checker work when using gas oil for carburetting, and mentioned that in the case of one works in New York which he had visited not long ago and where they used gas oil as well as heavy oil on two separate C.W.G. installations, it was their practice to gasify the gas oil in checkered carburettors. In regard to the use of coal tar as an enricher, Mr. Cheetham did not feel that this would be worth while owing to the large proportion of aromatic compounds present.

He quite agreed with Mr. Rhead that in the case of an electrical breakdown the operation of the water gas plant could not be continued indefinitely. If, however, the blower was turbine driven it would be quite practicable to continue to run the plant for, say, half an hour with the grate in a stationary position and this would doubtless cover the extent of most of the electrical failures.

It was very difficult to give comparative capital cost figures, since the types of plant varied so greatly. He thought that to generalise might only be misleading and asked Mr. Howes to be good enough to excuse him from stating any figures. In regard to the life of grit catchers he agreed that it was not as long as might be desired. On the other hand, the centriflovane type of equipment was inexpensive while, at the same time, being most efficient. It was customary in the case of modern plant to provide facilities for the easy removal of the grit catchers.

It was gratifying to know that the water gas plant which had been installed in Stamford in 1935 continued to operate satisfactorily and efficiently and that maintenance costs had been low. Mr. Clarke's views concerning the coke market were most interesting and it would be noticed that the figures given in the tables at the end of the paper were detailed sufficiently to provide for the ready insertion of cost figures other than those which had been stated so that the effect of lower priced coke could readily be ascertained.

The questions raised by Mr. Winch were important. He regretted, however, that he was not in a position to produce coal gas manufacturing costs nor, at this stage, could he offer figures covering general works charges. Mr. Winch would understand that it was not always easy for a contractor to obtain complete and comparable figures. The figure of 35 lb. of coke per 1,000 cu.ft. of 500 B.Th.U. gas given for 1948 in Table II should not, Mr. Cheetham contended, be difficult to obtain when using coke of the quality specified. There were, of course, many works where higher figures regularly obtained—this, however, being usually the result of the use of inferior quality fuel. He agreed with Mr. Winch that it was important to know the actual output which might be expected from C.W.G. plant when using the coke actually available and, so far as his Company was concerned, it was the practice to ascertain the full particulars of the fuel and give figures for output and coke consumption with such fuel. He thought it was desirable to give a guarantee under 'standard conditions' using coke containing 90% fixed carbon, so that the user was aware of the output which could be obtained under such conditions.

In regard to the design of plant to use ¾ in. to 1½ in. coke, the cost of such a plant for a given output would undoubtedly increase and, unless it was intended to use such small fuel regularly, it might be preferable to have standard plant and accept the reduction in output and efficiency resulting from the occasional use of small fuel. In regard to the use of heavy oil, the major change would be to arrange for the admission of secondary air to the top of the generator, thus providing for the gasification of a large proportion of the total oil within the generator.

It was difficult to give a true comparison of the costs of maintenance of the hydraulic and mechanical systems of operation since, as Mr. Winch would understand, the figures varied so greatly from one works to another. It was, he believed, true to say that maintenance of the mechanical system was more easily carried out. In the case of the hydraulic system, gas-making must, of course, be suspended when the hydraulic pressure failed, although modern plants were designed to ensure that in such emergency sufficient hydraulic power was available to shut down the plant to a safe position.

He agreed that the compensating holder was only applicable where the water gas as made could be stored with the coal gas. It should, however, be noted that the rate of output from the water gas plant could be varied substantially. In regard to the minimum capacity of plant on which it was economical to incorporate a waste heat boiler, it was difficult to give a definite figure, since conditions varied so greatly. In general, he thought it might be difficult to justify the capital cost of a waste heat boiler in the case of plant making less than 1 mill. cu.ft. in 24 hours. The provision of mechanical handling for ash and breeze depended a great deal upon works conditions. It had not so far been customary to provide for such mechanical handling in the case of plants making less than about 2 mill. cu.ft. in 24 hours.

PRESERVATION OF AMENITIES AND PRIVILEGES

BRITISH GAS STAFF ASSOCIATION'S ASPIRATIONS

THE annual conference of the British Gas Staff Association was held at the Hoare Memorial Hall, Church House, Westminster, on May 27 and 28. Delegates from all parts of the country attended and a heavy agenda comprising 12 items and a total of over 70 resolutions was dealt with in the course of the two days.

Mr. **W. E. Webb, J.P.,** Chairman, in the course of his address, said the great change-over involved in nationalisation had been accomplished without sound of trumpet and almost unnoticed by the general public and barely noticed by the gas staffs. Some people regarded nationalisation as the culmination of a lifelong dream; to others it was something of a tragedy. In the old undertakings as they knew them there was a strong feeling of loyalty and co-operation in service to the public. It was not easy to change old customs into something new, and probably the Chairman of the Gas Council had felt that the changes should be made gradually. However quickly the changes were effected they would, particularly for the smaller undertakings, be rather drastic. In the North Thames area they would be less obvious than in the provinces where there was a mixture of municipal and large and small private undertakings with different systems of pensions and co-partnership.

Non-Political

The attitude of the Association throughout had been strictly non-political. It had at one time been accused of having worked for nationalisation, but that was not true. It was recognised as soon as the present Government was elected that they intended to nationalise the industry, and for that reason the Association's policy was so shaped that when the Bill was introduced the B.G.S.A. was ready with its proposals and amendments for the preservation in the Bill of those amenities and privileges to which the members had been accustomed in the past. The Association had maintained that there should be employee representation on the area Boards, but an amendment to that effect introduced in the Lords was thrown out when the Bill went back to the Commons.

The Chairman and Deputy Chairman of the Gas Council were well known to them, and he felt they had very good friends to guide the destinies of the new set-up. They could congratulate themselves that seven of the area Board Chairmen were well known in the industry and there was reason to hope that the others had been equally wisely chosen and that their experience would be of benefit to the industry. The gas industry had entered into nationalisation with better organisation, better equipment and service than any of its predecessors in nationalisation. They had been largely trouble-free under private enterprise and he believed they would get along without serious difficulty, but they were not going to accept, without a fight, anything which was going to be detrimental to gas staffs in general. Speaking of prospects of betterment in the small undertakings, it was inevitable that the field of opportunity, particularly for the younger people, would be enhanced. Many good men in the past had never got very far, but under nationalisation the whole industry should be open to them.

Change and Activity

For the Association the past year had been a period of great change and tremendous enterprise and activity. Two additional organisers had been appointed, but even now he was afraid that under the new set-up their organising staff would not be sufficient to cover the country. National headquarters had been opened at Knightsbridge and expenses had increased to such an extent that he felt is desirable to issue a warning that it might become necessary to increase the subscriptions, which were at present the lowest of any trade union in the country. Relations with the National Association of Local Government Officers had to some extent deteriorated, although on matters affecting general welfare, pay, and conditions of gas staffs they had co-operated extremely well. In conclusion, Mr. Webb paid a warm tribute to the work of the Vice-Chairman, the Regional Chairmen, officers and staff, the Branch Chairmen and officers, the General Secretary, Mr. Henfrey-Smith, the National Organiser, Mr. H. J. Arnold, the financial adviser, Mr. Robson, and the whole of the headquarters staff.

Mr. W. E. Webb, J.P., was unanimously re-elected Chairman, and Mr. C. C. Holt (York Branch) was elected Vice-Chairman. Messrs. H. Bristow and G. Lovell were re-elected Auditors. Various alterations were made in the constitution of the Association, and a new rule was added, to read: 'To seek the appointment of representatives of the staff to the controlling bodies of the gas industry.'

A recommendation deferred from the 1948 conference that the Association should apply for affiliation to the Trades Union Congress was defeated. The conference placed on record its concern that the principle of employee representation on Boards of Control was not accepted by the Government in relation to the nationalised gas industry, and that the Minister of Fuel and Power, in appointing the Board members, had not assured that the employees' viewpoint on matters of policy should receive consideration. Under the heading of 'Policy' the meeting passed a resolution expressing the view that the retail sale, hire, fitting, and maintenance of gas and coke appliances were functions of the nationalised gas industry which should not be committed by the area Boards to private contractors or undertakings.

Filling Jobs from Within

The conference deplored the action of the Gas Boards in appointing persons from within the gas industry and from other industries and services to the senior positions on their staffs without first having advertised the vacancies in the Technical Press, and further resolved that all vacancies should be widely advertised within the industry, in the first place locally.

A proposition submitted by the National Council was approved asking that a permanent industrial committee should be set up, composed of Association members who are representative of all phases of the production and sale of gas and its by-products, with a view to making recommendations to the Gas Council and the area Boards. While recognising the progress made in joint negotiations through the formation of the National Joint Council for Gas Staffs, the meeting claimed that this form of negotiating machinery often led to delay in settling disputes and required revision to ensure settlement within a maximum period of three months.

The meeting rejected a resolution submitted by the Gas Light Northern Branch seeking to confine eligibility for election to the National and Regional Joint Councils to members of the Association's National or Regional Council and paid officials.

There were several resolutions on conditions of service. One asked for a continuance of existing pension schemes, with a proviso that in any new scheme introduced for the nationalised gas industry the rates of contributions and benefits should be no less favourable to the employees than those laid down in the scheme for the coal industry. Another declared the salary scales now operating throughout the gas industry to be totally inadequate and called on the National Council to press for salaries 'which will allow gas staffs to regain the living standards to which they are entitled.' A proposal to seek a five-day week was defeated, as also was a resolution asking for gas for domestic use for non-manual workers to be supplied free or at a substantial discount.

A proposal from West Wales that the Association should press for conditions of employment in the gas industry not less favourable than those enjoyed by employees of the British Electricity Authority was rejected. A resolution from Liverpool expressing the view that the interests of all non-manual workers would be better served if the Association, N.A.L.G.O., and other associations catering for such workers acted in harmony, was carried.

The meeting called on the National Council through its representatives on the National Committee on recruitment and training of juveniles to endeavour to extend the scope of training with special reference to selection and training for the higher grades of technical, administrative, and managerial positions, and further to seek co-operation with the British Association of Commercial and Industrial Education to ensure that the staff of the gas industry shall have full opportunity to qualify for responsible executive positions within the industry.

The Irish Labour Court has made recommendations in the dispute between the Alliance and Dublin Consumers' Gas Company, and the Workers' Union of Ireland concerning the rates of pay of certain workers employed by the company. With regard to main layers and service layers, the union claimed that the rates of pay of main layers should be raised to the same level as that of installation fitters, and that service layers' rates should be raised to those of maintenance fitters. In this claim the Court stated that the claim for uniformity of rates between the two groups had not been established. In respect of the claim for census takers that a 7s. 6d. differential between their rates and those of fitters should be restored by the granting of an increase of 4s. a week, the Court said that pay of census takers should be determined by comparison with the company's clerical workers. As neither party gave any information to enable such comparison to be made, the Court expressed no opinion on the appropriateness of the present rates of pay.

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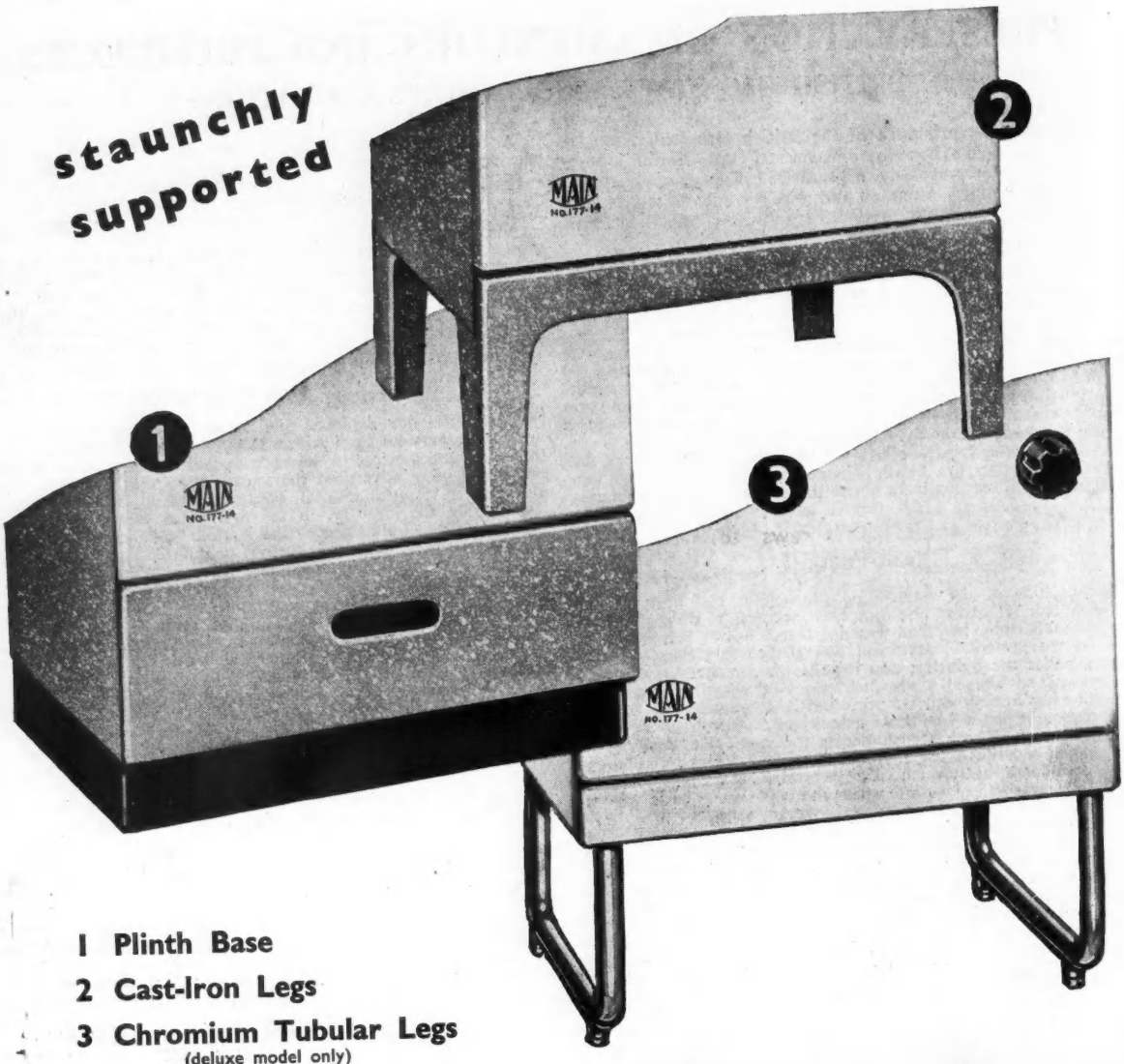

1 Plinth Base
2 Cast-Iron Legs
3 Chromium Tubular Legs
(deluxe model only)

MAIN 177 GAS

PLANS FOR 'BUILDING WEEK'

Plans for holding a 'Building Week' in the South-Eastern Region from Sept. 19 to 24 were announced on May 30 at a meeting at Tunbridge Wells. The draft programme includes an exhibition with contributions by industrial federations, professional institutes and Government research departments, covering plant demonstrations, building apprentices, and technical college and schools of art students at work. The Institution of Civil Engineers is staging the first 'Pre-stressed Concrete' exhibition in the Region.

The 'week' is sponsored by the Ministry of Works in association with the Southern Counties Federation of Building Trades Employers, Southern Counties Federation of Building Trades Operatives, Federation of Civil Engineering Contractors, Royal Institute of British Architects, Institution of Civil Engineers, South-Eastern Society of Architects, Ministry of Health, Ministry of Labour and National Service, Ministry of Education, Department of Scientific and Industrial Research, Ministry of Town and Country Planning, Ministry of Agriculture and Fisheries, Ministry of Fuel and Power, Building Apprenticeship and Training Council, the Schools of Architecture and Technical Colleges in the South-Eastern Region, South-Eastern Brick and Tile Federation, British Ceramic Research Association, South-Eastern Region Sand Lime Manufacturers, Stock Brick Manufacturers Association, Gypsum Building Products Association, and the Cement and Concrete Association.

SOLIHULL'S PHENOMENAL GROWTH

Few gas undertakings in this country have so remarkable a record of development as that at Solihull where, as reported in the *Journal* last week, Mr. S. J. Sadler, Engineer, Manager, and Secretary, in his capacity as President of the Midland Association of Gas Engineers and Managers, welcomed his fellow members for their Spring Meeting. The works is situated in rural surroundings adjoining the Grand Union Canal and was first started in 1869, before the railway was brought to Solihull, and occupied about half an acre. The present works extends over an area of 12½ acres and has been entirely rebuilt since 1933. Since Mr. Sadler took charge in 1921 the output has increased over 900% and is now around 400 mill. cu.ft. per annum.

The steel framed brick panelled retort house of modern design, built by the Woodall Duckham Company, houses two benches of 12 continuous vertical retorts, one bench being upwardly heated and the other arranged for lambent heating. Each bench has its separate range of step grate producers and a waste heat boiler, the total output from the boilers being 8,000 lb. of steam per hour. Coal handling is by bucket elevators, each of 40 tons per hour capacity, and a shuttle band conveyor over the main storage hoppers, which hold 48 hours' supply of coal. The output of the house is 1½ mill. cu.ft. per day and there is provision for a further eight retorts which will bring the output up to 2½ mill. cu.ft. per day. The coke handling plant, by R. Cort & Son, Ltd., consists of two screening plants of 25 tons per hour capacity and two storage bunkers, one of 100 tons and the other of 200 tons capacity.

The carburetted water gas plant consists of two Humphreys and Glasgow automatic sets each of 500,000 cu.ft. per day output housed in one building and complete with oil storage tanks, pumps, and separators. The condensers by C. & W. Walker, Ltd., are horizontal water tube type, each capable of dealing with 750,000 cu.ft. per day. There are two sets of steam driven exhausters; one a 100,000 cu.ft. per hour Holmes Connersville machine direct coupled to a Bellis & Morcom high speed steam engine and the other a 75,000 cu.ft. per hour four-blade Beal type machine, steam driven, by G. Waller & Sons.

The electro-detarrer at the outlet of the exhausters was installed by W. C. Holmes & Co., Ltd., and is capable of dealing with 3 mill. cu.ft. per day. The wet purification plant is of the usual type, made by W. C. Holmes Co., Ltd., and consists of P. and A. tar extractor, Livesey washers and two rotary brush washers, all of 1½ mill. cu.ft. per day capacity. The plant is housed in an old horizontal retort house and stands on a raft over the tar and liquor storage wells. The purifiers are of the overhead type and consist of four cast iron boxes 35 ft. by 25 ft. by 6 ft. deep elevated on a reinforced concrete structure. Oxide handling is by electric hoists and the plant capacity is 1½ mill. cu.ft. per day.

The oil washing type benzole plant with tower scrubber is capable of dealing with 1½ mill. cu.ft. per day. The station meter is a 2½ mill. cu.ft. per day Connersville machine.

Holder storage comprises four holders—a 1 mill. cu.ft. three-lift spiral-guided holder, 250,000 cu.ft. two-lift column-guided holder, 100,000 cu.ft. two-lift column-guided holder, all in steel tanks, and a 50,000 cu.ft. two-lift column-guided holder in brick tank as relief holder. The boiler house contains two 30 ft. by 9 ft. Lancashire boilers fitted with forced draught breeze burning grates having a total output of 16,000 lb. of steam per hour. For high pressure gas distribution there are three compressors, two steam driven (120,000 cu.ft. per hour at 25 lb. per sq. in., and 40,000 cu.ft. per hour at 15 lb. per sq. in.) and one gas engine driven (40,000 cu.ft. per hour at 15 lb. per sq. in.).

In the centre of the town is a well-appointed showroom combined with the main offices and the fittings and appliance stores and shops. The distribution department is self-contained and is provided with the necessary tackle to deal with all emergencies. Of special note is a pressure vacuum service clearing plant which has proved its worth in dealing with stopped services. Distribution is by low pressure and high pressure mains, a low pressure holder station at Knowle and Dorridge taking care of that area and being supplied by high pressure mains from Solihull.

NEW GAS STOCK VALUES

The Minister of Fuel and Power issued on June 3 another list giving compensation values of certain securities, affecting 27 undertakings, as determined under Part II of the Gas Act. The list is as follows:—

Undertaker	Security	Unit	Compensation value
Aberdare & Aberaman	4% Deb. Stock	£100	£101
Do.	6% Pref. Shares	£10	£12/18/–
Do.	5% Pref. Shares	£10	£11/4/–
Alfreton	6% Pref. Stock	£100	£127/10/–
Do.	Orig. Stock	£100	£210
Do.	Addl. Stock	£100	£150
Aylesbury	4% Red. Mort. Debentures (£50)	£50	£50
Bishop's Stortford	4% Deb. Stock	£100	£101
Do.	3½% Deb. Stock	£100	£98
Do.	5½% "E" Pref. Stock	£100	£122
Do.	5% "C" Pref. Stock	£100	£112
Do.	4% "D" Pref. Stock	£100	£100/10/–
Do.	"A" Ord. Stock	£100	£140
Do.	"B" Ord. Stock	£100	£130
Bolsover	Orig. Shares	£5	£4/5/–
Do.	Addl. Shares	£5	£3
Bromsgrove	4% Deb. Bonds	£100	£100/5/–
Bury St. Edmund's	4% Red. Bonds	£50	£50
Do.	3½% Red. Debentures	£50	£50
Do.	Consolidated Stock	£100	£123
Carmarthen	4% Pref. Shares	£25	£25/3/–*†
Dawlish	4½% Red. Pref. Shares	£1	20/3*
Gowerton	5% Pref. Shares	£5	£5/12/–
Hampton Court	4% Perp. Debentures	£100	£101/10/–
Do.	5% Red. Deb. Stock	£100	£103
Do.	4% Pref. Stock	£100	£101
Heckington	Ord. Shares	£10	£24
Leamington Priors	4% Red. Deb. Stock	£100	£100/5/–
Do.	"A" Ord. Shares	£20	£41
Do.	"B" Ord. Shares	£20	£30/10/–
Do.	"C" Ord. Shares	£20	£30/10/–
Llanelly	4½% Red. Deb. Stock	£100	£106/10/–
Do.	3½% Red. Deb. Stock	£100	£100/10/–
Do.	4½% Red. Pref. Stock	£100	£104
Do.	4% Red. Pref. Stock	£100	£101/10/–*
Luton	5% Deb. Stock	£100	£124
Do.	4% Deb. Stock	£100	£102
Do.	4½% Red. Deb. Stock	£100	£103/5/–
Do.	5% "C" Pref. Shares	£5	£5/12/–
Do.	4% "B" Pref. Shares	£5	£5
Do.	5% Red. Pref. Stock	£100	£104/5/–
Do.	"A" Ord. Stock	£100	£165
Do.	"B" Ord. Stock	£100	£135
Mablethorpe & Sutton	5% Pref. Shares	£1	£1/1/–
Do.	Orig. Shares	£10	£10/10/–
Do.	Addl. Shares	£1	15/–
Do.	"B" Shares	£1	15/–
Merthyr Tydfil	5% Deb. Stock	£100	£125
Do.	5% Pref. Stock	£100	£112
Morley	4% Red. Pref. Stock	£100	£101/10/–*
Ormskirk	4% Red. Pref. Stock	£100	£100*
Oxford	4% Red. Pref. Stock (1962)	£100	£100/3/8*†
Quakers Yard	4½% Debentures	£100	£100
Redditch	5½% Red. Deb. Stock	£100	£104
Do.	4½% Red. Deb. Stock	£100	£101/10/–
Do.	4% Red. Deb. Stock (1963)	£100	£101/5/–
Do.	4% Red. Deb. Stock (1955)	£100	£101/5/–
Do.	5% Pref. Stock	£100	£112
Do.	5% Red. Pref. Stock	£100	£101/15/–
Do.	Ord. Stock	£100	£135
Rhymney & Aber	4% Deb. Stock	£100	£101/10/–
Do.	5½% Red. Deb. Stock	£100	£108
Do.	5% Pref. Shares	£5	£5/12/–
Do.	Ord. Stock	£100	£145/10/–
Sheffield	4% Perp. Deb. Stock	£100	£103
Southampton	5% Perp. Deb. Stock	£100	£125
Do.	4% Deb. Stock	£100	£102/10/–
Do.	5% Red. Deb. Stock (1961)	£100	£110
Do.	5% Red. Deb. Stock (1967)	£100	£11 1
Do.	3½% Red. Deb. Stock	£100	£99/10/–
Do.	5½% Pref. Stock	£100	£124
Do.	5% Pref. Stock	£100	£112/10/–
Do.	4% Pref. Stock	£100	£101
South Normanton	4½% Red. Deb. Bonds	£100	£100
Do.	Ord. Shares	£5	£10/10/–
Worcester	4½% Deb. Stock	£100	£112/10/–
Do.	Ord. Stock	£100	£240

* Securities the value of which are determined by reference to the price of issue in accordance with Section 25 (5) or 25 (6) of the Act. In addition, the following note applies in certain cases.

† More than one value applies to securities of this class, by reference to Section 25 (7) of the Act. The average value in accordance with Section 25 (7) (*b*) is shown, and is applicable except where the issue price (Section 25 (7) (*a*)) determines the compensation value.

GAS IN NEW HOUSING

Built for the working man and woman the new Winthorpe housing estate at Skegness is now a completed part of a scheme in which further development is contemplated. The houses, of othodox design conforming generally to standard methods, have some important features which are of interest to the architect, builder, and householder. Brick is used throughout in building these houses but, unlike previous practice, the walls have sealed cavities so that a cushion of static air helps in thermal insulation.

All flues are centralised, away from exterior walls; thus full benefit is obtained from radiated and conducted heat. This has been further utilised in siting the cold water feed and cold storage tank against the chimney stack. The cold feed tank is in the roof space, the roof being felted and tiled, and water pipes in the roof are wrapped with vermin-proof hair felt. One of the outstanding features is that the houses are smokeless. Plentiful hot water throughout is ensured; in winter, from a back boiler heated from a gas-ignited open fire designed to burn coke or other smokeless fuel, and in summer from a New World gas circulator.

This is housed in a cupboard built in the false breast of the lounge fireplace, opening into the dining space. The door of this cupboard is perforated for ventilation purposes, and the circulator is connected by means of separate flow and return pipes and isolating valve direct to the cylinder. For reducing scale a New World scale reducer is fitted on the cold feed with a stop cock just above the cylinder.

The circulator is flued by means of a 4½ in. by 9 in. bricked flue terminating above the roof with a normal 9 in. by 9 in. flue and chimney pot in the same stack as the open fire. Provision is also made for heating the houses; the bedrooms with panel-type hot water radiators, and the dining space with a small gas fire. All floors are of composition with coved skirtings for easy cleaning, and the supply pipes, while passing through the floor, are laid in ducts and protected against corrosion.

The kitchen is well planned with plenty of cupboards and is equipped with up-to-date gas appliances including a Radiation F202 cooker and a gas wash boiler.

Tenants of the estate have expressed satisfaction in the gas-operated appliances installed and in the labour-saving and attractive interiors of the houses. Mr. R. H. Jenkins, Surveyor and Mr. Hyde, Clerk of the Works, with whom the Skegness U.D.C. Gas Department cooperated in the installation of the whole of the gas equipment, are to be congratulated on this example of a modern housing estate.

TRADE NEWS

Alar, Ltd., have announced that the address of their Development Offices has been changed to 3, Albemarle Street, London, W.1. Telephone: Mayfair 2901.

* * *

From the **Power-Gas Corporation, Ltd.,** 39, Victoria Street, London, S.W. 1, we have received an illustrated booklet describing methods of dust and fume control and recovery equipment, reference number D.R. 349. Three main types of 'Dracco' filters are illustrated—fully automatic, semi-automatic, and manually operated—which have a capacity range from 200 c.f.m. to 100,000 c.f.m. Their filtering efficiency is normally of the order of 99.5% plus, even in many cases where the minimum particle size of the dust to be collected is as low as 0.5 microns. Details are also included of gas-cooling equipment, cyclones, and auxiliary plant. The main advantages of the system are summarised, and an abridged list of the types of dusts and fumes being handled by existing installations indicates the wide range and adaptability of the plant.

* * *

A method of eliminating heat losses in the side flue control of Lancashire boilers has been announced by the **Metropolitan Engineering Co., Ltd.,** in a leaflet, P/1149. The 'Metro-Flex' system of side flue control which is described effects a considerable reduction in the fuel bill of boilers in intermittent service by enabling the brick setting, heated up during the operative shift, to be used as a heat accumulator during the off-shift. A system is used of flexible components which are pressed tightly against their seating by the suction of the draught, eliminating the need for banking, and re-firing or flashing the boilers during stoppage. In addition, it is claimed, fuel consumption will be reduced after restarting, and a much quicker start with a higher pressure in the morning will contribute to preserving brickwork and boiler. Other features of the unit are a self-sealing frame, gas-tight expansion seal, and special gate-type dampers. The leaflet is available from the manufacturers, 75, Wool Exchange, Coleman Street, London, E.C.2.

* * *

Elliott Brothers (London), Ltd., Century Works, Lewisham, S.E. 13, have issued a coloured leaflet on their equipment for the measurement of relative humidity. The system gives a direct, continuous reading, and is described as the simplest and most reliable for all industrial purposes. Air is drawn by a fan over two dry and one wet electrical resistance thermometers, and the relative humidity reading, automatically compensated for temperature, is transmitted to a distant indicator or a recorder. The equipment has the advantage of obviating reference to curves or tabulations, and, in addition, can easily be linked with air-conditioning plant.

* * *

C.S.A. Industries, Ltd., Warwick, have published in a recent leaflet details of the 'English Rose' styled Hazel domestic boiler. The appliance has been designed to provide sufficient hot water for a normal household and can also be used at the same time to heat at least three medium sized radiators and a hot towel rail. It will operate efficiently on any of the fuels in plentiful supply such as gas coke, 1-2 in., coalite, anthracite and dry steam coal. The boiler is contained in a cabinet of pylumnised aluminium, finished in hard baked cream or pastel green enamel, with a stainless steel, hinged top. Other features are a special simmering plate together with a space within the lid for casserole cooking. An exclusive advantage which is claimed is the principle of weekly or fortnightly ash removal. Another important feature is a simple control switch which actuates both air inlet and special flue damper and thereby provides complete control over fuel consumption and water temperature. Fuel consumption per 24 hours is rated at 15-30 lb. for hot water only, and at 30-45 lb. for central heating.

* * *

The increasing use of aluminium wire and cable has recently resulted in the formation of one organisation, the **Aluminium Wire and Cable Co., Ltd.,** to coordinate and amalgamate the technical development, production, stranding, and marketing of aluminium and aluminium alloy wire. The activities of this Company, which has been launched by the British Aluminium Co., Ltd., Tube Investments, Ltd., and the Hawker Siddeley Group, have been set out in a brochure which is available on request from the Sales Office, 10, Buckingham Place, London, S.W. 1. Pages are devoted to the range of 'AWCO' products, which includes round, flat and shaped wire, narrow strip, stranded conductors and cable, overhead transmission line fittings, and accessories, and also to their various properties. The publication is attractively illustrated, and shows a selection of products and plant at the Company's Swansea Works.

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More extensive facilities for research and improved technical service for the tin consuming industries are described in the report of the Tin Research Institute for 1947-48, recently published as an illustrated booklet. In this review of the Institute's activities are included research work on electro-tinning, hot-tinning, investigation into improvements in the methods of manufacturing bearings, and the further development of tin-zinc coatings. Corrosion stations in six different parts of Britain and at three points in the U.S.A. are being used to study the corrosion-resisting properties of tin and tin-alloy coatings under service conditions. Lectures have been delivered to technical societies in this period, and information has been provided to schools for lecture purposes. Copies of the report can be obtained free of charge, from the Institute, Fraser Road, Greenford, Middlesex.

COMPANY RESULT

Woodall-Duckham, Ltd.

The Directors of Woodall-Duckham, Ltd., have recommended the payment of an Ordinary dividend at 15%, less tax, for the year ended December 31. Consolidated profits for the year applicable to Woodall-Duckham, Ltd., are £215,101, against £168,250 for the previous year. After providing for taxation there is a net group profit of £89,145, of which £48,680 is retained in subsidiaries, leaving £40,465 available for the parent company. Provision of £2,750 for accrued Preference dividend and payment of Ordinary dividend leaves £4,715 to be carried forward.